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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/869,003	09/25/2001	Giuseppe Scala	15280-3862US	6807

7590 07/15/2004

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EXAMINER	
STUCKER, JEFFREY J	

ART UNIT	PAPER NUMBER
1648	

DATE MAILED: 07/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/869,003	SCALA ET AL.	
	Examiner	Art Unit	
	Jeffrey Stucker	1648	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 May 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☑ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) *3,4,8,+11-23* is/are withdrawn from consideration.

5)☑ Claim(s) *1,2,5,9,10* is/are allowed~~.~~ *able*

6)☑ Claim(s) *6,7,a9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7 May 2004 has been entered.

Claims 3, 4, and 8 and 11-23 remain withdrawn from consideration as being directed to non-elected inventions. Applicant is correct that claim 6 should be examined. While the subject matter of claim 6 has been examined, by an oversight, this claim has not be included in the actual statements of rejection. Claims 6, 7, and 9 are examined and under final rejection. Claims 1, 2, 5, and 10 are allowable.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office Action.

The amendment to claim 9 re-inserting the sequence number is noted.

The rejection of claim 10 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention is withdrawn. Because the subsequence is limited not being flanked by HIV specific amino acids, it seems that the limitation of "Does not give rise to HIV-1 specific antibodies...on HIV-1" is a quality of the antigenic peptide.

The rejection of claim 1 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention is withdrawn in view of the amendment.

The rejection of claims 1, 2, 5, and 10 under 35 U.S.C. § 101 because the invention as disclosed is inoperative and therefore lacks patentable utility is withdrawn over the antigenic composition claims.

The rejection of claims 6, 7, and 9 under 35 U.S.C. § 101 because the invention as disclosed is inoperative and therefore lacks patentable utility. The rejection is maintained against the vaccine claims.

Applicant argues that than invention must have "practical utility so that one skilled in the art can use a claimed discovery in a manner which provides some immediate benefit to the public"; that it is well established that as long as there is a reasonable correlation between the data presented to show utility and the asserted utility, the requirements of § 101 are met; that it is not proper to require actual studies in humans to support utility. Applicant argues that the specification provides working examples demonstrating that administration of peptides comprising SEQ ID NO: 1/31 leads to specific antibody response in macaques and development of neutralizing antibodies in mice which are purported to provide reasonable evidence that the claimed vaccine compositions are useful for diagnosis and therapy of HIV-1 infection. Applicant points to Dr. Scala's declaration for evidence that macaques are an art recognized model for HIV-1 infection, that vaccinated macaques had low virus titers, and did not develop symptoms which demonstrate "unequivocally" that the claimed peptides actually produce a protective response *in vivo*, and would be reasonably predictive of similar results in other organisms, including humans.

Applicant's arguments have been fully considered but are not deemed to be persuasive. As noted in previous Office Actions, the art recognizes the term "vaccine" to be a compound which prevents infection. It is not clear how a vaccine that merely produces an immune response, and not protection, is of

any immediate benefit to the public. Though it appears that there is some development of an efficacious immune response in macaques administered the claimed peptide, there is no demonstrable correlation between the macaque model and human disease, contrary to applicant's assertions. With all due respect to Dr. Scala, the declaration is not convincing because published art indicates that workers in the field of HIV vaccines are divided as to the correlation between the macaque model and human disease. While applicant quotes from Malenbaum et al. implying that it is established that the SHIV macaque model is applicable to humans. However, the quote on page 11 of the response is prefaced in the article with "reasonable to assume...." The same reference also states on page 9287, bottom five lines of the first column: "However, the central question of the extent to which information obtained in the SHIV-macaque model, particularly with regard to humoral immune protection, can be extrapolated or applied to the human setting remains unclear. Limited data are available that directly compare...."

Nath et al. is another reference which is a review of various animal models that are used in the study of HIV. The authors conclude that it is unclear that either the chimpanzee or macaque models compare with humans and HIV infection. See the last paragraph.

An additional article not cited by applicant is also relevant. Feinberg et al. state in the last paragraph that, though the macaque models can potentially add important insights, "[a]nimal models cannot determine whether a vaccine will be effective against HIV-1 infection of humans; only Phase III trials in humans can do so." Though the examiner does not require clinical data, the artisans indicate that this is the only way to be confident of the efficacy of a given treatment.

As to the assertion that the vaccinated macaques had low virus titers, and did not develop symptoms which demonstrate "unequivocally" that the claimed peptides actually produce a protective response *in vivo*, this is not commensurate with the scope of the claims and is not a demonstration that the claimed composition is a vaccine for preventing HIV-1 infection.

Therefore, given the years of lack of success in producing and HIV-1 vaccine despite many years of effort and lack of a disclosed vaccine, claims directed to an anti-HIV-1 vaccine are not operative and, thus, lack patentable utility.

The rejection of claims 1, 2, and 5 under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for an antigenic composition, does not reasonably provide enablement for a vaccine which protects against HIV-1 is withdrawn on these claims.

The rejection of claims 6, 7, and 9 under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for an antigenic composition, does not reasonably provide enablement for a vaccine which protects against HIV-1 is maintained.

Applicant argues that the specification provides sufficient guidance to make and use the vaccine to generate an immune response against HIV-1; there is ample support for peptides comprising SEQ ID NO 1/31 and methods of synthesizing peptides; making and administering vaccine formulations are well known in the art and disclosed; the specification describes experiments that administration of peptides comprising the sequence set forth in SEQ ID NO: 1/31 leads to specific antibody responses in macaques and the development of neutralizing antibodies against HIV-1; Dr. Scala's declaration "confirming" that administration of peptides comprising the sequence set forth in SEQ ID NO: 1/31 to macaques leads to a protective response against SHIV infection, an art accepted model for HIV-1.

Applicant's arguments have been fully considered but are not deemed to be persuasive. The arguments and references set forth in the previous office action are still applicable. There is no dispute that the specification enables a peptide comprising SEQ ID NO 1/31 and methods of synthesizing it. Nor is there a dispute that the antigenic peptide will produce an

antibody response. The examiner is even willing to concede that the peptide can produce a protective response in macaques. However, the scope of the claims is much broader than this. The examiner is not willing to concede that the SHIV macaque model is indicative of human responses to HIV infection. The state of the art is such that, though the amount of experimentation and the level of skill is high, one would not know how to make and use a *vaccine* comprising the antigenic peptide. As indicated in the previous Office Action, and the § 101 rejection, *supra*, there is no indication that the SHIV macaque model reliably correlates with human HIV infection.

For example, Malenbaum et al., cited by applicant, states on page 9287, bottom five lines of the first column: "However, the central question of the extent to which information obtained in the SHIV-macaque model, particularly with regard to humoral immune protection, can be extrapolated or applied to the human setting remains unclear. Limited data are available that directly compare...."

Nath et al. is a review of various animal models that are used in the study of HIV. The authors conclude that it is unclear that either the chimpanzee or macaque models compare with humans and HIV infection. See the last paragraph.

Feinberg et al. state in the last paragraph that, though the macaque models can potentially add important insights,

"[a]nimal models cannot determine whether a vaccine will be effective against HIV-1 infection of humans; only Phase III trials in humans can do so." Though the examiner does not require clinical data, the artisans indicate that this is the only way to be confident of the efficacy of a particular treatment given the uncertainty of the macaque model.

Though, as applicant states, vaccines, in general, are known in the art, the instant application is not enabled for vaccines which protect against HIV-1.

Claims 1, 2, 5, and 10 are allowable.

No claims are allowed.

All claims are drawn to the same invention claimed in the application prior to the entry of the submission under 37 CFR 1.114 and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the application prior to entry under 37 CFR 1.114. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action after the filing of a request for continued examination and the submission under 37 CFR 1.114. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. § 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

Papers related this application may be submitted to Group 1600 by facsimile transmission. Papers should be faxed to Group 1600 via the PTO Fax Center located in Crystal Mall 1. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG (November 15, 1989).

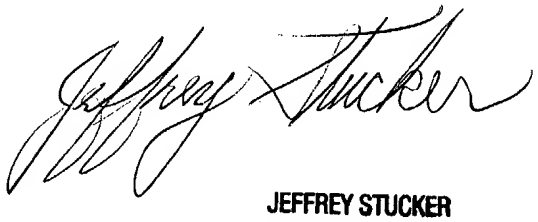
The Group 1600 Fax number is: (703) 308-4242.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Tech Center representative whose telephone number is (571)-272-1600.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey Stucker whose telephone number is (571)-272-0911. The examiner can normally be reached Monday to Thursday from 7:00am-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Housel, can be reached on (571)-272-0902.



JEFFREY STUCKER
PRIMARY EXAMINER